

Work Order ID 161956

161956

Page 1

Tuesday, May 23, 2017 11:04:16 AM

Item ID: D4961-041 Accept *N900040100* Setup Start *NS1*
 Revision ID: Stop *NS2*
 Item Name: Tube Assembly
 Start Date: 6/15/2017 Start Qty: 4.00 *4* Cust Item ID:
 Required Date: 6/23/2017 Req'd Qty: 4.00 *4* Customer:
 Reference:

Approvals: Process Plan: PA 21 9-89 Date: 20170525 Tooling: _____ Date: _____ Run Start *NR1*
 QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop *NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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Draw Nbr	Revision Nbr
D4961	C

110 0.00
110
 Small Fab Memo 1.33
 Small Fab 1- Cut D4961-1 tube to size as per dwg
 2- On one side of tube flare end as per dwg then slide sleeves and nuts, flare other side of tube as per dwg.

4 19
9-89
 JUL 06 2017

120 0.00
120
 QC Memo 0.08
 Quality Control QC5- Inspect part completeness to step on W/O

4 38
9-89
 JUL 07 2017

130 0.00
130
 Packaging Memo 0.04
 Packaging Identify as per dwg & Stock Location: ST139

4 28
9-89
 JUL 07 2017

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval		
Description Work Order Deviation				Disposition				Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval	

Root Cause				FAULT CATEGORY							
Environment	☐	No Re-verification	☐	Pressure/Forced	☐	Temperature/Cure	☐	Power Loss/Surge	☐	Positioned Wrong	☐
Design	☐	Operator	☐	Bending	☐	Set-up	☐	Folio/Program	☐	Outside Dimensions	☐
Doc/Data	☐	Offset/Setup	☐	Centre Not Concentric	☐	BOM/Route	☐	Grain	☐	Over/Under tolerance	☐
Equip/Tooling	☐	Supplier	☐	Cracks	☐	Broken/Damage/Defect	☐	Weld	☐	Part Incorrect	☐
Handling/Pre	☐	Training	☐	Crimp/Kink/Ripple/Wave	☐	Inspection Incomplete/Unqualified	☐	Wrong Stock Pulled	☐	Part Lost/Missing	☐
Material	☐	Use for Testing	☐	Cuffs	☐	Contamination	☐	Out of Sequence	☐	Part Moved	☐
Internal Transport	☐	Poor Information	☐	Crushing	☐	Countersink	☐	Off-set	☐	Drawing	☐
Tribal Knowledge	☐	Rushing	☐	Heat Treat	☐	Cut Too Short	☐	Mislabeled	☐	Finish	☐
LOA	☐	Product Improvement	☐	Wave/Twist in Tube	☐	Instructions Incomplete/Unclear	☐	Fit/Function	☐	Misread	☐
Substation	☐	Process Improvement	☐	Marks/Chatter	☐	Drill Holes	☐	Misaligned/off center	☐	Turning Sequence	☐
Past Expiry Date	☐	Manufacturing Process	☐	OTHER :							
Misidentified	☐	Past Due	☐								

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Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
140	QC21- Final Inspection - Work Order Release	0.00							
140									
QC	Memo	0.40							
Quality Control									



JUL 10 2017

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐																																																													
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Misidentified ☐	Past Due ☐																																																																

Picklist Print

Tuesday, May 23, 2017 11:04:15 AM

Page 1

Work Order ID: 161956

161956

Parent Item: D4961-041

D4961-041

Parent Item Name: Tube Assembly

Start Date: 6/15/2017

Required Date: 6/23/2017

Start Qty: 4.00

Required Qty: 4.00

Comments: IPP REV:A 13.10.22 NEW ISSUE DD VERF:JFS IPP
REV:B 15.02.18 AS PER DWG REV.B DD VERF:JFS

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
---------------------------------	------------------------	---------------	-------------	---------------------	------------------	-----------------	--------------------	----------------	-------------	--------------	---------------	----------------	--------

AN818-L12J

Purchased

No

110

Each

20.0000

2

8

DAS
19
2-89 JUL 06 2017

AN818-I 12.I

Nut

Location

Loc Qty

Loc Code

ST325

20

m137361

20

M304TR0.750W.049

Purchased

No

110

f

114.0120

0.7

2.947368

DAS
19
9-89 JUL 06 2017

M304TR0 750W 049

304 RD Tube .750 x .049W

Location

Loc Qty

Loc Code

GA002

114.0119922

M135709

0.0000037

M136943

0.000158

M137091

1.0065145

M137286

49.457316

M137415

19.496

M137477

44.052

MS20819-12J

Purchased

No

110

Each

20.0000

2

8

DAS
19
9-89 JUL 06 2017

MS20819-12.I

Sleeve

Location

Loc Qty

Loc Code

ST305

20

m137361

10

m137587

10

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE

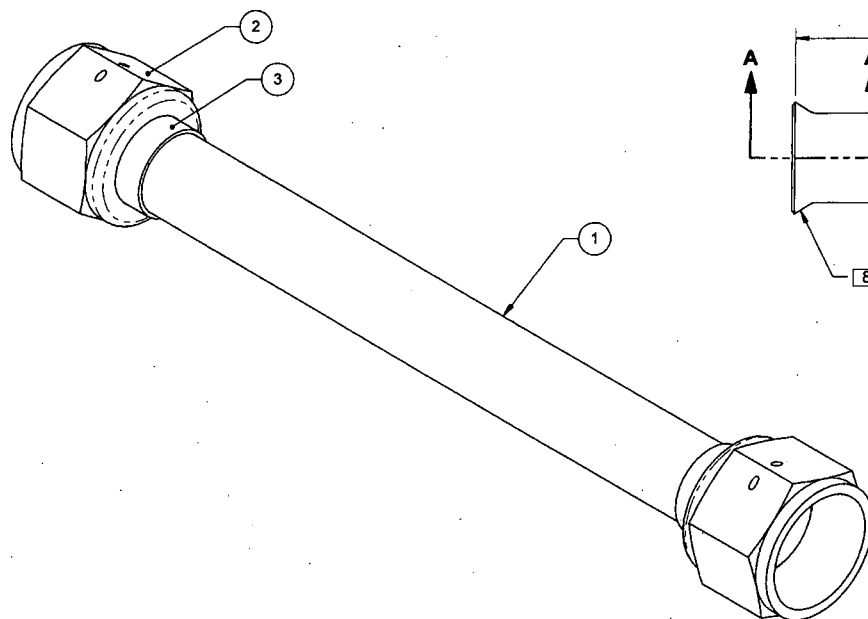
QA Closed: _____

Date: _____

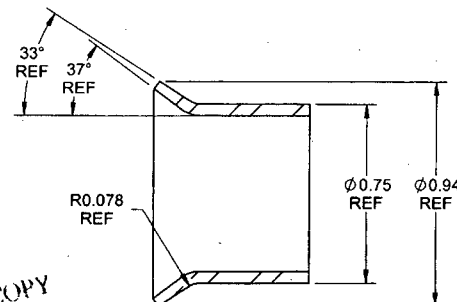
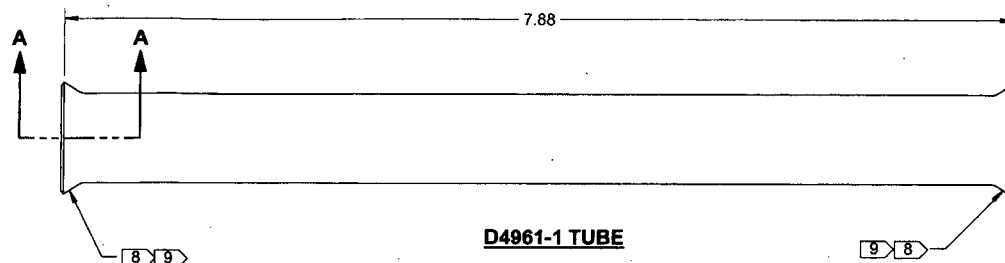
Work Order update only ☐

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Date : _____		Step #: _____		QTY Effective : _____			MRB (QSI042) Approval				
Description Work Order Deviation				Disposition				Completed By			
								Lead hand / Supervisor Approval Verification			
								QC / QA Coordinator Approval			
Root Cause		FAULT CATEGORY									
Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Expiry Date ☐ Verified ☐	No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐	Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐	Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐	Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center ☐	Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐						
OTHER : _____											

ITEM	QTY	P/N	DESCRIPTION
	X	D4961-041	TUBE ASSEMBLY
1	1	D4961-1	TUBE
2	2	AN818-L12J	NUT, TUBE COUPLING (DRILLED)
3	2	MS20819-12J	SLEEVE



D4961-041 TUBE ASSEMBLY



SECTION A-A

- NOTES:**
- 1) MATERIAL: AISI 304/316 STAINLESS STEEL SEAMLESS ROUND TUBING, $\phi 0.750 \times 0.049$ WALL PER ASTM A213 OR ASME SA213 OR ASTM A269 (REF DART SPEC M304TR)
 - 2) FINISH: N/A
 - 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
 - 4) UNITS: INCHES UNLESS OTHERWISE NOTED
 - 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
 - 6) IDENTIFICATION: IDENTIFY PER QSI 044 6.1
 - 7) WEIGHT: 0.59 lbs
 - 8) FLARE TUBE PER MS33584
 - 9) CLEAN INSIDE OF TUBE AFTER FLARING ENDS

SHOP COPY
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UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. 16-9567
RELEASED
2016-08-04
EW 16-622

DESIGN	VS	ADDED D4961-045 (SHEET 3)	CC	16.06.21
DRAWN	CC	UPDATED BOM P/N AN818-L12J WAS AN818-12J. ADDED SHEET 2 (D4961-043)	AK	14.11.07
CHECKED	VS	NEW ISSUE	VS	13.10.21
MFG. APPR.	DD	REV.	BY	DATE
APPROVED	HS	DESCRIPTION		
DE APPR.	DS			
DATE	16.06.21			

DART AEROSPACE LTD

HAWKESBURY, ONTARIO, CANADA

DRAWING NO. **D4961** REV. C
SHEET 1 OF 3
TITLE **TUBE ASSEMBLY** SCALE NTS

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